

**ABSTRACT OF THE DISCLOSURE**

The present technique provides for the estimation and correction of bone induced spectral (BIS) artifacts. Spectral matching is employed to approximate the incident X-ray spectrum attenuated by bone and water with an X-ray spectrum attenuated by water alone. A table can be built to express the amount in apparent projection value shift for objects containing bone and water compared with water-like object when their corresponding normalized spectra match. The BIS error may thereby be determined from existing spectral error data obtained from spectral calibration. A corresponding correction factor may be determined from the shift value.